



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/863,808	05/22/2001	Wen Lu	S-522,000	8928
7590 06/04/2004				
Samuel M. Freund The Law Offices of William W. Cochran, LLC 3555 Stanford Road, Suite 230 Fort Collins, CO 80525			EXAMINER DOUGHERTY, THOMAS M	
			ART UNIT 2834	PAPER NUMBER

DATE MAILED: 06/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/863,808

**Applicant(s)**

SMELA ET AL.

**Examiner**

Thomas M. Dougherty

**Art Unit**

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06/01/04.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-15 is/are pending in the application.
- 4a) Of the above claim(s) 6-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. <u>604</u> . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                    | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)                               |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____. | 6) <input type="checkbox"/> Other: _____.   |

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Shigeru et al. (JP 2000-083389). Shigeru et al. show (fig. 1) an electromechanical actuator (1) comprising a high conductivity conjugated polymer element (1) other than a polypyrrole element having an electrical conductivity of  $\geq 150$  S/cm, wherein said element actuates by linear extension/contraction (see line 1 of SOLUTION).

The high-conductivity conjugated polymer is prepared from a monomer selected from the group consisting of **aniline** (line 2 of SOLUTION), thiophene, phenylene, vinylene and derivatives thereof.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shigeru et al. (JP 2000-083389) in view of Hiroshi et al. (JP 2000-261054). Given the invention of Shigeru et al. as noted above, use of derivatives for the high-conductivity conjugated polymer is not discussed.

Hiroshi et al. notes in his SOLUTION an actuator of a resin composition which is a copolymer acrylic ester having an alkyl group whose carbon number is 2.

It would have been obvious to one having ordinary skill in the art to have the material of Hiroshi et al. in the device of Shigeru et al. at the time their invention was made since this is an equivalent material as noted by the Applicants in their material options in their claims. Additionally, it would have been obvious to employ the material of Hiroshi et al. for expansion and contraction when actuated because such motions are capable of doing useful work as is clear from Shigeru et al.

Finally, it would have been obvious to one having ordinary skill in the art at the time the invention was made to select for the actuator material a derivative of high-conductivity conjugated polymer since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416. Note that the applicants themselves offer at least 11 possible materials for their actuator.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Armgarth et al. (US 6,587,250) note (col. 6, ll. 14-23) that an electrochemically active element which is comprised of an electrochromic element such as polyaniline (col. 1, ll. 44-47) is known. However the date of that patent does not meet the requirements for application of that patent against the present invention under any of the sections of U.S.C. 102, consequently it cannot be applied.

Application/Control Number: 09/863,808

Page 4

Art Unit: 2834

Direct inquiry concerning this action to Examiner Dougherty at (571) 272-2022.

*tmd*  
tmd

May 20, 2004

*Thomas M. Dougherty*  
**THOMAS M. DOUGHERTY**  
**PRIMARY EXAMINER**  
**GROUP 2800**